

Geographic Analysis and Monitoring Program

Early Warning and Environmental Monitoring Project

Statement of Problem

The incidence of drought-induced famine in many countries continues to be a global concern. The U.S. Agency for International Development (USAID) and other agencies and organizations throughout the world benefit from earth science research. USGS contributes by providing access to satellite data and other remote sensing and geographic information system (GIS) technologies in order to identify potential and current threats to food security from drought and flood hazards.

Objectives

The objectives of this project are to conduct research and applications of new approaches for monitoring environmental hazards through creative use of principles of geographic information science. Activities are designed to lead to operational implementation of

products and techniques to provide early warning of adverse impacts on human populations and ecosystems.

Relevance and Impact

A geographic framework is a powerful means for integration of hazard and vulnerability information available from disparate sources. Risks can be more clearly perceived and mitigated if the coincidence of hazards and vulnerability can be mapped. Decision-making for response or preparation can be made in a more effective and timely way when there is a convergence of evidence regarding a possible or imminent threat. USGS research and applications can help minimize loss of life and property from natural disasters, and reduce threats to ecosystems upon which our livelihoods depend.

Strategy and Approach

Geographic information system (GIS)

technology is employed to integrate data from remote sensing, weather forecast models, resource inventories, and digital base mapping to develop indicators that speak to specific concerns of sectors such as agriculture, food security, water resources management, and forest management. Principles of climatology and hydrology are applied in a GIS context such that results are readily integrated with geographic themes of human settlement, agriculture, and infrastructure. SIR funds are used to reach out to partners and create opportunities for technical cooperation, while reimbursable funds are used for development and implementation of new approaches.

For More Information

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